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EXAMINER	
WANG, JIN CHENG	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/911,474	IDA ET AL.	
	Examiner	Art Unit	
	Jin-Cheng Wang	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8/2/2006, 7/5/2006, 3/20/2006, 10/5/2004, 2/4/2004, 12/19/2003, 11/12/2003, 10/2/2003, 6/20/2003, 1/31/2002, and 7/25/2001 .

DETAILED ACTION

Information Disclosure Statement

It is acknowledged that the information disclosure statements filed 8/2/2006, 7/5/2006, 3/20/2006, 10/5/2004, 2/4/2004, 12/19/2003, 11/12/2003, 10/2/2003, 6/20/2003, 1/31/2002, and 7/25/2001 have been entered and considered.

Specification

A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In a non-limiting example, the claim 1 recites "setting manually one of an overwrite enable mode and an overwrite disable mode to the alpha data". Applicant speculates the claim limitation of "setting manually one of an overwrite enable mode and

an overwrite disable mode to the alpha data". However, overwriting or not overwriting the alpha data (See claim 2's limitation of overwriting the new alpha data on the alpha data set) is not the same as the claimed "setting manually one of an overwrite enable mode and an overwrite disable mode to the alpha data". Claim 2 further recites "overwriting the new alpha data on the alpha data set to the overwrite enable mode and inhibiting overwriting to the alpha data set to the overwrite disable mode." Applicant speculates the limitation of "overwriting the new alpha data on the alpha data set to the overwrite enable mode and inhibiting overwriting to the alpha data set to the overwrite disable mode." Overwriting the new alpha data on the alpha data set is not the same as the claimed "overwriting the new alpha data on the alpha data set to the overwrite enable mode" and inhibiting overwriting to the alpha data set is not the same as the claimed "inhibiting overwriting to the alpha data set to the overwrite disable mode." Claim 3 further recites "displaying a video image display lane which displays a plurality of frames of the video image, and setting selectively the overwrite enable mode and the overwrite disable mode to the frames." Applicant speculates the limitation of "displaying a video image display lane which displays a plurality of frames of the video image, and setting selectively the overwrite enable mode and the overwrite disable mode to the frames." The claim 1 recites manually one of an overwrite enable mode and an overwrite disable mode to the alpha data while the claim 3, which depends upon the claim 1, recites setting selectively the overwrite enable mode and the overwrite disable mode to the frames. Overwriting with respect to the alpha data is different from overwriting with respect to the frames. For the same reason as the claim 3, applicant speculates in the claim 4 the limitation of "setting initially the overwrite enable mode to all the frames, and then

changing selectively the overwrite enable modes on the frames to the overwrite disable mode in accordance with the result of the determining." Applicant speculates in claim 5 the limitation of "terminating processing for extracting an object when the overwrite disable mode is determined". Overwrite may be disabled during the object extraction from a frame wherein the object's movement is not detected, the processing still continues with the next frame and the processing is not terminated. However, "terminating processing" is claimed. The claims 6-11 depend upon the claim 1 and are rejected due to their dependency on the claim 1.

In a non-limiting example, the claim 12 recites "performing an object extraction by generating a plurality of alpha data corresponding to a plurality of frames of the video image". Applicant speculates the claim limitation of "generating a plurality of alpha data corresponding to a plurality of frames of the video image". There are the set of frames corresponding to the overwrite enable mode and the set of frames corresponding to the overwrite disable mode. It should be acknowledged that there is no updating of the alpha data for a frame with the overwrite disable mode, or the frame originally having overwrite enable but later is no object motion detected.

In a non-limiting example, the claim 13 recites "performing an object extraction by generating alpha data for each of a plurality of frames of the video image". Applicant speculates the claim limitation of "performing an object extraction by generating alpha data for each of a plurality of frames of the video image". It should be acknowledged that there is no updating of the alpha data for a frame with overwrite disable mode or a frame with the overwrite enable mode but without a detected object motion. There is no alpha data generated for every frame of the video image.

In a non-limiting example, the claim 14 recites "manually designate one of an overwrite enable mode to each of a plurality of frames of the video image". Applicant speculates the claim limitation of "manually designate one of an overwrite enable mode to each of a plurality of frames of the video image". The overwrite enable mode is not designated to each or every one of the plurality of frames of the video image. The overwrite enable mode is designated to some frames of the video image frames through the user input and/or to the frame in which the motion of a moving object has been detected. The claims 15-19 depend upon the claim 14 and are rejected due to their dependency on the claim 14. The claim 20 is subject to the same rationale of rejection set forth in the claim 14.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In a non-limiting example, the claim 1 recites "setting manually one of an overwrite enable mode and an overwrite disable mode to the alpha data". The claim limitation of "setting manually one of an overwrite enable mode and an overwrite disable mode to the alpha data" is ambiguous. Overwriting or not overwriting the alpha data (See claim 2's limitation of overwriting the new alpha data on the alpha data set) is not the same as setting manually one of an overwrite enable mode and an overwrite disable mode

to the alpha data. Claim 2 further recites "overwriting the new alpha data on the alpha data set to the overwrite enable mode and inhibiting overwriting to the alpha data set to the overwrite disable mode." The claim limitation of "overwriting the new alpha data on the alpha data set to the overwrite enable mode and inhibiting overwriting to the alpha data set to the overwrite disable mode" is ambiguous. Overwriting the new alpha data on the alpha data set is not the same as "overwriting the new alpha data on the alpha data set to the overwrite enable mode" and inhibiting overwriting to the alpha data set is not the same as "inhibiting overwriting to the alpha data set to the overwrite disable mode." Claim 3 further recites "displaying a video image display lane which displays a plurality of frames of the video image, and setting selectively the overwrite enable mode and the overwrite disable mode to the frames." The claim limitation of "displaying a video image display lane which displays a plurality of frames of the video image, and setting selectively the overwrite enable mode and the overwrite disable mode to the frames" is ambiguous. The claim 1 recites manually one of an overwrite enable mode and an overwrite disable mode to the alpha data while the claim 3, which depends upon the claim 1, recites setting selectively the overwrite enable mode and the overwrite disable mode to the frames. Overwriting with respect to the alpha data is different from overwriting with respect to the frames. For the same reason as the claim 3, the claim limitation of "setting initially the overwrite enable mode to all the frames, and then changing selectively the overwrite enable modes on the frames to the overwrite disable mode in accordance with the result of the determining", set forth in the claim 4, is ambiguous. In claim 5, the limitation of "terminating processing for extracting an object when the overwrite disable mode is determined" is ambiguous. Overwrite may be

disabled during the object extraction from a frame wherein the object's movement is not detected, however, the processing still continues with the next frame and the processing is not terminated. Claim 4 recites the limitation "the determining" in 6 of the claim. There is insufficient antecedent basis for this limitation in the claim. The claim 6 recites displaying a plurality of thumbnails obtained by reducing the frames. The claim limitation reducing the frames is ambiguous. The thumbnails are displayed at the reduced sizes of the frames. It cannot be said that the thumbnails are displayed by reducing the frames. The claims 6-11 depend upon the claim 1 and are rejected due to their dependency on the claim 1.

In a non-limiting example, the claim 12 recites "performing an object extraction by generating a plurality of alpha data corresponding to a plurality of frames of the video image". The claim limitation of "generating a plurality of alpha data corresponding to a plurality of frames of the video image" is ambiguous and vaguely construed. There are the set of frames corresponding to the overwrite enable mode and the set of frames corresponding to the overwrite disable mode. It should be acknowledged that there is no updating of the alpha data for a frame with the overwrite disable mode or the frame with overwrite enable mode but without a detected object motion.

In a non-limiting example, the claim 13 recites "performing an object extraction by generating alpha data for each of a plurality of frames of the video image". The claim limitation of "performing an object extraction by generating alpha data for each of a plurality of frames of the video image" is ambiguous and vaguely construed. It should be acknowledged that there is no updating of the alpha data for a frame with overwrite

disable mode or a frame with the overwrite enable mode but without a detected object motion. There is no alpha data generated for every frame of the video image.

In a non-limiting example, the claim 14 recites "manually designate one of an overwrite enable mode to each of a plurality of frames of the video image". The claim limitation of "manually designate one of an overwrite enable mode to each of a plurality of frames of the video image" is ambiguous and vaguely construed. The overwrite enable mode is not designated to each or every one of the plurality of frames of the video image. The overwrite enable mode is designated to some frames of the video image frames through the user input and/or to the frame in which the motion of a moving object has been detected. The claims 15-19 depend upon the claim 14 and are rejected due to their dependency on the claim 14. The claim 20 is subject to the same rationale of rejection set forth in the claim 14.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

In the interest of compact prosecution, the application is further examined against the prior art, as stated below, upon the assumption that the applicants may overcome the above stated rejections under 35 U.S.C. 112.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 9, 11-16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown) in view of Pan et al. U.S. Patent No. 6,785,329 (hereinafter Pan).

Claim 1:

Brown discloses a method for extracting an object from a video image including an object and a background (e.g., Fig. 4 includes an object and the associated background; see also Figs. 6a-6b), comprising:

Performing an object extraction (Fig. 4 and Fig 6b wherein the object is detected and extracted) by generating alpha data in units of one frame using the video image (the segmentation mask of Fig. 4 in units of one frame using the video image frames), the alpha data representing an object region including the object (the segmentation mask includes an object);

Setting manually one of an overwrite enable mode and an overwrite disable mode to the alpha data, the overwrite enable mode being for permitting overwriting and the overwrite disable mode for inhibiting overwriting (*At column 5, lines 10-25 Brown teaches that the segmentation mask records the locations in which relevant motions have occurred and these locations correspond to the locations in the frame where relevant motion was detected in which the segmentation mask stores the locations in a well known fashion similar to the use of an alpha channel in digital video hardware. At column 6, lines 50-67 Brown teaches that the attribute difference exceeds the sensitivity, a relevant motion is detected and the attribute difference is compared to the likelihood value*

computed from the motion history record to determine if a more statistically likely relevant motion has occurred; At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask); and

Detecting the overwrite enable mode and the overwrite disable mode in units of one frame (*At column 5, lines 10-25 Brown teaches that the segmentation mask records the locations in which relevant motions have occurred and these locations correspond to the locations in the frame where relevant motion was detected in which the segmentation mask stores the locations in a well known fashion similar to the use of an alpha channel in digital video hardware. At column 6, lines 50-67 Brown teaches that the attribute difference exceeds the sensitivity, a relevant motion is detected and the attribute difference is compared to the likelihood value computed from the motion history record to determine if a more statistically likely relevant motion has occurred; see Fig. 4 wherein the segmentation mask are in units of one frame; At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is*

updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask).

Pan discloses a method for extracting an object from a video image including an object and a background (Figs. 2-4), comprising:

Performing an object extraction (column 5, lines 40-45) by generating alpha data in units of one frame using the video image (*e.g., column 6, lines 1-15, column 8, lines 1-20 and column 9, lines 1-30, column 10, lines 20-25 and column 11, lines 1-12 wherein the alpha data includes a color segmentation mask, motion segmentation mask, a frame difference mask, a texture mask and a depth mask*), the alpha data representing an object region including the object ((*e.g., column 6, lines 1-15, column 8, lines 1-20 and column 9, lines 1-30, column 10, lines 20-25 and column 11, lines 1-12 wherein the alpha data includes a color segmentation mask, motion segmentation mask, a frame difference mask, a texture mask and a depth mask and all of the masks to be used are combined to generate the final mask that identifies the objects extracted from the source video frames*);

Setting manually one of an overwrite enable mode (*e.g., column 8, lines 1-10, the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final motion mask; At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects*

is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode. At column 6, lines 39-52 Pan discloses that the user selects one of these frames for performing color segmentation and thus allows the colors or pixels of the selected frame to be incorporated in the color segmentation mask; column 9-10, if the percent of the region that is assigned to a moving object exceeds a predetermined threshold, then the whole region is deemed to be part of the moving object and thus the region is incorporated in the final mask) and an overwrite disable mode to the alpha data (*e.g., column 8, lines 1-10, the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final motion mask*), the overwrite enable mode being for permitting overwriting and the overwrite disable mode for inhibiting overwriting (*e.g., column 8, lines 1-10, the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final motion mask; At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has*

the overwrite enable mode and the frames not selected has the overwrite disable mode.); and

Detecting the overwrite enable mode and the overwrite disable mode in units of one frame (*e.g., column 8, lines 1-10, the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final motion mask*).

Brown does not explicitly teach object extraction. However, Brown implicitly teaches the object extraction in Figs. 6a-6b wherein the shark object is extracted from a plurality of frames and the strobe photo having the moving shark object is displayed. Pan explicitly discloses the object extraction using contours etc. It would have been obvious to one of the ordinary skill in the art to have incorporated Pan's object extraction into Brown's method and apparatus because Brown at least teaches or suggests the object extraction of the shark object or a ball object in the strobe photo.

One of the ordinary skill in the art would have been motivated to do so to allow the moving object be extracted from the frames and synthesized so as to display the synthesized images of the moving object allowing the moving trajectory/path/locus of the moving object to be extracted from the plurality of the frames (Brown Figs. 6a-6b).

Claim 2:

Brown further discloses the claim limitation of generating new alpha data for the alpha data set to the overwrite enable mode, overwriting the new alpha data on the alpha data set to the overwrite enable mode and inhibiting overwriting to the alpha data set to

the overwrite disable mode (*At column 5, lines 10-25 Brown teaches that the segmentation mask records the locations in which relevant motions have occurred and these locations correspond to the locations in the frame where relevant motion was detected in which the segmentation mask stores the locations in a well known fashion similar to the use of an alpha channel in digital video hardware. At column 6, lines 50-67 Brown teaches that the attribute difference exceeds the sensitivity, a relevant motion is detected and the attribute difference is compared to the likelihood value computed from the motion history record to determine if a more statistically likely relevant motion has occurred; see Fig. 4 wherein the segmentation mask are in units of one frame; At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask*).

Pan further discloses the claim limitation of generating new alpha data for the alpha data set to the overwrite enable mode, overwriting the new alpha data on the alpha data set to the overwrite enable mode and inhibiting overwriting to the alpha data set to the overwrite disable mode (*e.g., column 8, lines 1-10, the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final*

motion mask; At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode. At column 6, lines 39-52 Pan discloses that the user selects one of these frames for performing color segmentation and thus allows the colors or pixels of the selected frame to be incorporated in the color segmentation mask; column 9-10, if the percent of the region that is assigned to a moving object exceeds a predetermined threshold, then the whole region is deemed to be part of the moving object and thus the region is incorporated in the final mask).

Claim 3:

Brown further discloses the claim limitation of displaying a video image display lane which displays a plurality of frames of the video image (*Figs. 2 and 4 wherein the video frames are arranged in a lane*) and setting selectively the overwrite enable mode and the overwrite disable mode to the frames (*At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask*).

Pan further discloses the claim limitation of displaying a video image display lane which displays a plurality of frames of the video image and setting selectively the overwrite enable mode and the overwrite disable mode to the frames (*At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode*).

Claim 4:

Brown further teaches the claim limitation of setting initially the overwrite enable mode to all the frames (*At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask*), and then changing selectively the overwrite enable modes on the frames to the overwrite disable in accordance with the result of the determining (*At column 5, lines 10-25 Brown teaches that the segmentation mask records the locations in which relevant motions have occurred and these locations correspond to the locations in the frame where relevant motion was detected in which the segmentation mask stores the locations in a well known fashion similar to the use of an alpha channel*

in digital video hardware. At column 6, lines 50-67 Brown teaches that the attribute difference exceeds the sensitivity, a relevant motion is detected and the attribute difference is compared to the likelihood value computed from the motion history record to determine if a more statistically likely relevant motion has occurred. Thus the overwrite enable modes on the frames are further changed as a result of determining a relevant motion existing within each of the frames by detecting the relevant motion).

Claim 5:

Brown further discloses the claim limitation of terminating processing for extracting an object when the overwrite disable mode is determined (*At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask and when a frame is not sampled, the processing for extracting a moving object is not performed*).

Claim 6:

Brown further discloses the claim limitation of displaying a plurality of thumbnails obtained by reducing the frames (See Figs. 2 and 4 wherein a plurality of thumbnails are shown).

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown) in view of Pan et al. U.S. Patent No. 6,785,329 (hereinafter Pan) and Clapper et al. U.S. Patent No. 6,925,602 (hereinafter Clapper).

Claim7:

The claim 7 further encompasses the same scope of invention as that of the claim 3 except additional claim limitation of displaying a video display window which enlarges and displays a selected one of the thumbnails. .

Brown and Pan are silent to displaying a video display window which enlarges and displays a selected one of the thumbnails. However, in Figs. 2 and 4 Brown discloses that displaying a plurality of thumbnails and the display window can be adjusted by the user wherein the resolution of the thumbnails change with respect to the window it resides.

Clapper teaches in column 2 the claim limitation of displaying a video display window which enlarges and displays a selected one of the thumbnails. Clapper teaches a graphical user interface allowing the user to edit the video frames represented by the thumbnails and the size of the thumbnails displayed in Fig. 1 of Clapper increases with respect to the number of frames selected or with respect to the window size that the thumbnails are displayed

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to have incorporated a graphical user interface of Clapper into Brown and Pan because it allows the editing of the video frames to change the size of the thumbnails on a display. Brown discloses in Figs. 2 and 4 displaying a plurality of

thumbnails and their sizes can be changed with respect to the size of the window and thus at least teaches or suggests the claim limitation of enlarging a selected one of the thumbnails.

One of the ordinary skill in the art would have been motivated to do so to interactively change the size of the thumbnails displayed on a display device (See Clapper Figs. 1-3).

Claim 8:

Brown further discloses the claim limitation of displaying the video display window with at least one of the object region and a background region corresponding to the background is painted with a color (column 6, lines 9-27).

Claim 9:

Brown further discloses the claim limitation of displaying the frames by selectively skipping them (Figs. 2 and 4 wherein the frames not sampled are not displayed).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown) in view of Pan et al. U.S. Patent No. 6,785,329 (hereinafter Pan) and Clapper et al. U.S. Patent No. 6,925,602 (hereinafter Clapper).

Claim 10:

The claim 10 further encompasses the same scope of invention as that of the claim 3 except additional claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode.

Brown and Pan are silent to displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode. However, at column 4, lines 60-67 and column 6, lines 63-67 Brown discloses that a user enters the strobe parameters including the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling the frames wherein sampling of the frames allows the overwrite enable mode and the overwrite disable mode to be set to the frames. Thus, Brown at least suggests the claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode.

Clapper teaches the claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode to the frames (See Clapper Figs. 1-3).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to have incorporated a graphical user interface allowing the starting frame, the end frame and the frame interval to be set by a user by incorporating the graphical user interface of Clapper into Brown's system and method so that a mode setting lane indicating a frame range of Brown can be displayed on the graphical user interface to allow the strobe parameters to be entered by the user. Brown also teaches a graphical user interface in Fig. 1 and Brown teaches a user enters the strobe parameters. It is reasonable that Brown teaching of a user's entry of the strobe parameters is through the graphical user interface in Fig. 1 and thus Brown at least teaches or suggests the claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode to the frames. Clapper clearly

teaches displaying a mode setting lane that indicates a frame range that can be used in Brown to allow the strobe parameters to be entered and the overwrite enable mode and the overwrite disable mode to be set to the frames.

One of the ordinary skill in the art would have been motivated to do so to interactively enter the strobe parameters while the thumbnail images representing the video sequence are viewed simultaneously to control the manipulation of the video sequence (See Clapper Figs. 1-3).

Claim 11:

Brown further discloses the claim limitation of setting the overwrite disable mode to a frame in which a motion vector detection error is small, a motion is small, or a difference in pixel values at both ends of an object contour is large (*At column 6, lines 1-67 and column 7, lines 1-45 Brown teaches the adaptive threshold for each of the frame that is dynamically set so that the proportion of relevant motions found in any iteration does not exceed the specified amount. In addition, Brown teaches the attribute difference vector and the sensitivity thresholds corresponding to the attribute difference vector. Brown teaches updating the statistical parameters of the attribute difference depending on the criteria used to detect a relevant motion wherein the parameter includes a specified confidence range. Brown teaches updating the segmentation mask at the corresponding locations if a relevant motion is detected at one or more locations. Brown teaches determining and updating locations from the object to the background and vice versa; see also column 7-8 wherein the threshold T and the confidence limit are the different parameters representing the threshold values for determining the object or the background*).

Claim 12:

Brown teaches a method for extracting an object from a video image including an object and a background, comprising:

Performing an object extraction (*At column 6, lines 1-50 Brown discloses motion detection to specifically isolate the moving object*) by generating a plurality of alpha data (*At column 6, lines 1-35 Brown teaches a motion history record and segmentation mask are created or generated*) corresponding to a plurality of frames of the video image using a plurality of different parameters representing threshold values for determining the object or the background (*At column 6, lines 1-67 and column 7, lines 1-45 Brown teaches the adaptive threshold for each of the frame that is dynamically set so that the proportion of relevant motions found in any iteration does not exceed the specified amount. In addition, Brown teaches the attribute difference vector and the sensitivity thresholds corresponding to the attribute difference vector. Brown teaches updating the statistical parameters of the attribute difference depending on the criteria used to detect a relevant motion wherein the parameter includes a specified confidence range. Brown teaches updating the segmentation mask at the corresponding locations if a relevant motion is detected at one or more locations. Brown teaches determining and updating locations from the object to the background and vice versa; see also column 7-8 wherein the threshold T and the confidence limit are the different parameters representing the threshold values for determining the object or the background*); and

Selecting one of the parameters for each of the frames (*Brown teaches in column 6, lines 1-50 selecting a constant change detection threshold of 10 percent; see also*

column 7-8 wherein the threshold T and the confidence limit are the different parameters representing the threshold values for determining the object or the background).

Pan teaches a method for extracting an object from a video image including an object and a background (*e.g., column 5, lines 17-34*), comprising:

Performing an object extraction (*at column 10, lines 20-25 Pan discloses all of the masks to be used are combined to generate the final mask that identifies the objects extracted from the source video; at column 9, lines 15-30 Pan discloses that the color segmentation and motion segmentation masks are combined to extract moving objects with substantially pixel-wise accuracy*) by generating a plurality of alpha data (*At column 11, lines 1-12 Pan discloses generating and combining the masks including a motion mask, a frame difference mask, a color mask, a texture mask and/or a depth mask*) corresponding to a plurality of frames of the video image using a plurality of different parameters representing threshold values for determining the object or the background (*At column 9, lines 33-50 Pan discloses that the whole region is deemed to be part of the moving object if the percent of the region that is assigned to moving object exceeds a predetermined threshold wherein this threshold is between fifty and sixty percent; see column 7-10 wherein T1 is the predetermined threshold set according to the motion in determining the motion mask, T4 is the threshold in determining the difference mask; At column 8, lines 1-20 Pan discloses that the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final motion mask*); and

Selecting one of the parameters for each of the frames (*Pan discloses in column 7 that the adaptive motion parameter T1 is set to one for slow motion and to anywhere from two to three for fast motion. Pan further discloses another adaptive parameter wherein the frame interval parameter for two frames is adapted, for a fast motion field, the interval can be set small and for slow motion the interval can be set large wherein the frame interval is adapted according to the estimated motion*).

Brown does not explicitly teach object extraction. However, Brown implicitly teaches the object extraction in Figs. 6a-6b wherein the shark object is extracted from a plurality of frames and the strobe photo having the moving shark object is displayed. Pan explicitly discloses the object extraction using contours etc. It would have been obvious to one of the ordinary skill in the art to have incorporated Pan's object extraction into Brown's method and apparatus because Brown at least teaches or suggests the object extraction of the shark object or a ball object in the strobe photo.

One of the ordinary skill in the art would have been motivated to do so to allow the moving object be extracted from the frames and synthesized so as to display the synthesized images of the moving object allowing the moving trajectory/path/locus of the moving object to be extracted from the plurality of the frames (Brown Figs. 6a-6b).

Claim 13:

Brown teaches a method for extracting an object from a video image including an object and a background, comprising:

Inputting a motion parameter indicating a motion of at least one of the object, the background or the entire video image (*At column 6, lines 1-67 and column 7, lines 1-45*

Brown teaches the adaptive motion parameters including the threshold for each of the frame that is dynamically set so that the proportion of relevant motions found in any iteration does not exceed the specified amount. In addition, Brown teaches the attribute difference vector and the sensitivity thresholds corresponding to the attribute difference vector. Brown teaches updating the statistical parameters of the attribute difference depending on the criteria used to detect a relevant motion wherein the parameter includes a specified confidence range. Brown teaches updating the segmentation mask at the corresponding locations if a relevant motion is detected at one or more locations.).

Performing an object extraction (*At column 6, lines 1-50 Brown discloses motion detection to specifically isolate the moving object*) by generating alpha data (*At column 6, lines 1-35 Brown teaches a motion history record and segmentation mask are created or generated*) for each of a plurality of frames of the video image, using the motion parameter (*At column 6, lines 1-67 and column 7, lines 1-45 Brown teaches the adaptive threshold for each of the frame that is dynamically set so that the proportion of relevant motions found in any iteration does not exceed the specified amount. In addition, Brown teaches the attribute difference vector and the sensitivity thresholds corresponding to the attribute difference vector. Brown teaches updating the statistical parameters of the attribute difference depending on the criteria used to detect a relevant motion wherein the parameter includes a specified confidence range. Brown teaches updating the segmentation mask at the corresponding locations if a relevant motion is detected at one or more locations at each iteration of the frame(s). Brown teaches determining and updating locations from the object to the background and vice versa; see also column 7-8*

wherein the threshold T and the confidence limit are the different parameters representing the threshold values for determining the object or the background).

Pan teaches a method for extracting an object from a video image including an object and a background (*e.g., column 5, lines 17-34*), comprising:

Inputting a motion parameter indicating a motion of at least one of the object, the background or the entire video image (*Pan discloses in column 7 that the adaptive motion parameter T1 is set to one for slow motion and to anywhere from two to three for fast motion. Pan further discloses another adaptive parameter wherein the frame interval parameter for two frames is adapted, for a fast motion field, the interval can be set small and for slow motion the interval can be set large wherein the frame interval is adapted according to the estimated motion*); and

Performing an object extraction (*at column 10, lines 20-25 Pan discloses all of the masks to be used are combined to generate the final mask that identifies the objects extracted from the source video; at column 9, lines 15-30 Pan discloses that the color segmentation and motion segmentation masks are combined to extract moving objects with substantially pixel-wise accuracy*) by generating alpha data (*At column 11, lines 1-12 Pan discloses generating and combining the masks including a motion mask, a frame difference mask, a color mask, a texture mask and/or a depth mask*) for each of a plurality of frames of the video image, using the motion parameter (*At column 9, lines 33-50 Pan discloses at each iteration of processing a frame or frames, a mask is generated and generating a mask includes the process that the whole region is deemed to be part of the moving object if the percent of the region that is assigned to moving object exceeds a*

predetermined threshold wherein this threshold is between fifty and sixty percent; see column 7-10 wherein T1 is the predetermined threshold set according to the motion in determining the motion mask, T4 is the threshold in determining the difference mask; At column 8, lines 1-20 Pan discloses that the frequency of a pixel is assigned to a moving object in a number of motion masks such as ten or more. If the frequency is higher than a predetermined threshold, then this pixel is determined as a moving pixel. Otherwise, it is designated as background and is removed from the final motion mask). and

Selecting one of the parameters for each of the frames (*Pan discloses in column 7 that the frame interval parameter for two frames is adapted, for a fast motion field, the interval can be set small and for slow motion the interval can be set large wherein the frame interval is adapted according to the estimated motion*).

Brown does not explicitly teach object extraction. However, Brown implicitly teaches the object extraction in Figs. 6a-6b wherein the shark object is extracted from a plurality of frames and the strobe photo having the moving shark object is displayed. Pan explicitly discloses the object extraction using contours etc. It would have been obvious to one of the ordinary skill in the art to have incorporated Pan's object extraction into Brown's method and apparatus because Brown at least teaches or suggests the object extraction of the shark object or a ball object in the strobe photo.

One of the ordinary skill in the art would have been motivated to do so to allow the moving object be extracted from the frames and synthesized so as to display the synthesized images of the moving object allowing the moving trajectory/path/locus of the moving object to be extracted from the plurality of the frames (Brown Figs. 6a-6b).

Re Claims 14 and 20:

Brown discloses an apparatus which extracts an object from a video image including an object and a background (e.g., Fig. 4 includes an object and the associated background; see also Figs. 6a-6b), comprising:

An object extraction device configured to perform an object extraction (Fig. 4 and Fig 6b wherein the object is detected and extracted) by generating alpha data in units of one frame using the video image (the segmentation mask of Fig. 4 in units of one frame using the video image frames), the alpha data representing an object region including the object (the segmentation mask includes an object);

A designation device configured to manually designate one of an overwrite enable mode and an overwrite disable mode to each of a plurality of frames of the video image, the overwrite enable mode being for permitting overwriting and the overwrite disable mode for inhibiting overwriting (*At column 5, lines 10-25 Brown teaches that the segmentation mask records the locations in which relevant motions have occurred and these locations correspond to the locations in the frame where relevant motion was detected in which the segmentation mask stores the locations in a well known fashion similar to the use of an alpha channel in digital video hardware. At column 6, lines 50-67 Brown teaches that the attribute difference exceeds the sensitivity, a relevant motion is detected and the attribute difference is compared to the likelihood value computed from the motion history record to determine if a more statistically likely relevant motion has occurred; At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be*

performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask); and

A device configured to perform an overwrite or an overwrite inhibit in accordance with the mode designated by designation device (*At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses the user designation of overwrite mode for designating each of the plurality of frames by setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask*).

Pan discloses an apparatus which extracts an object from a video image including an object and a background (Figs. 2-4), comprising:

An object extraction device configured to perform an object extraction (column 5, lines 40-45) by generating alpha data in units of one frame using the video image (*e.g., column 6, lines 1-15, column 8, lines 1-20 and column 9, lines 1-30, column 10, lines 20-25 and column 11, lines 1-12 wherein the alpha data includes a color segmentation mask, motion segmentation mask, a frame difference mask, a texture mask and a depth mask*),

the alpha data representing an object region including the object ((*e.g., column 6, lines 1-15, column 8, lines 1-20 and column 9, lines 1-30, column 10, lines 20-25 and column 11, lines 1-12 wherein the alpha data includes a color segmentation mask, motion segmentation mask, a frame difference mask, a texture mask and a depth mask and all of the masks to be used are combined to generate the final mask that identifies the objects extracted from the source video frames*);

A designation device configured to manually designate one of an overwrite enable mode (*At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode. At column 6, lines 39-52 Pan discloses that the user selects one of these frames for performing color segmentation and thus allows the colors or pixels of the selected frame to be incorporated in the color segmentation mask; column 9-10*) and an overwrite disable mode to each of a plurality of frames of the video images (*At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode. At column 6, lines 39-52 Pan discloses that the user selects one of these frames for performing color segmentation and thus allows the colors or pixels of the selected frame*

to be incorporated in the color segmentation mask; column 9-10), the overwrite enable mode being for permitting overwriting and the overwrite disable mode for inhibiting overwriting (*At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode*); and

A device configured to perform an overwrite or an overwrite inhibit in accordance with the mode designated by designation device (*At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode*).

Brown does not explicitly teach object extraction. However, Brown implicitly teaches the object extraction in Figs. 6a-6b wherein the shark object is extracted from a plurality of frames and the strobe photo having the moving shark object is displayed. Pan explicitly discloses the object extraction using contours etc. It would have been obvious to one of the ordinary skill in the art to have incorporated Pan's object extraction into Brown's method and apparatus because Brown at least teaches or suggests the object extraction of the shark object or a ball object in the strobe photo.

One of the ordinary skill in the art would have been motivated to do so to allow the moving object be extracted from the frames and synthesized so as to display the synthesized images of the moving object allowing the moving trajectory/path/locus of the moving object to be extracted from the plurality of the frames (Brown Figs. 6a-6b).

Claim 15:

Brown further discloses the claim limitation of the designation device including a display unit configured to display a video image display lane which displays a plurality of frames of the video image (*Figs. 2 and 4 wherein the video frames are arranged in a lane*) and a mode setting unit which selectively sets the overwrite enable mode and the overwrite disable mode to the frames (*At column 4, lines 60-67 and column 6, lines 63-67 Brown discloses setting the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling or filtering the frames allowing the detection of relevant motions to be performed on the moving object within the frame and in column 7-8 the segmentation mask and the motion history record is updated as the video sequence is sampled wherein sampling means enabling/sampling the frame for updating the segmentation mask and frames not sampled means that disabling/not sampling the frame for updating the segmentation mask*).

Pan further discloses the claim limitation of the designation device including a display unit configured to display a video image display lane which displays a plurality of frames of the video image and a mode setting unit which selectively sets the overwrite enable mode and the overwrite disable mode to the frames (*At column 7, lines 52-60, Pan discloses that the frame interval is adapted according to the estimated motion where the*

motion of moving objects is minimal the interval of two frames is adapted and for a fast motion field, the interval can be set small and for slow motion the interval is set large. The frames selected for motion detection processing has the overwrite enable mode and the frames not selected has the overwrite disable mode).

Claim 16:

Brown further discloses the claim limitation of displaying a plurality of thumbnails obtained by reducing the frames (See Figs. 2 and 4 wherein a plurality of thumbnails are shown).

Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown) in view of Pan et al. U.S. Patent No. 6,785,329 (hereinafter Pan) and Clapper et al. U.S. Patent No. 6,925,602 (hereinafter Clapper).

Claim 17:

The claim 17 further encompasses the same scope of invention as that of the claim 16 except additional claim limitation of displaying a video display window which enlarges and displays a selected one of the thumbnails. .

Brown and Pan are silent to displaying a video display window which enlarges and displays a selected one of the thumbnails. However, in Figs. 2 and 4 Brown discloses that displaying a plurality of thumbnails and the display window can be adjusted by the user wherein the resolution of the thumbnails change with respect to the window it resides.

Clapper teaches in column 2 the claim limitation of displaying a video display window which enlarges and displays a selected one of the thumbnails. Clapper teaches a

graphical user interface allowing the user to edit the video frames represented by the thumbnails and the size of the thumbnails displayed in Fig. 1 of Clapper increases with respect to the number of frames selected or with respect to the window size that the thumbnails are displayed

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to have incorporated a graphical user interface of Clapper into Brown and Pan because it allows the editing of the video frames to change the size of the thumbnails on a display. Brown discloses in Figs. 2 and 4 displaying a plurality of thumbnails and their sizes can be changed with respect to the size of the window and thus at least teaches or suggests the claim limitation of enlarging a selected one of the thumbnails.

One of the ordinary skill in the art would have been motivated to do so to interactively change the size of the thumbnails displayed on a display device (See Clapper Figs. 1-3).

Claim 18:

Brown further discloses the claim limitation of displaying the video display window with at least one of the object region and a background region corresponding to the background is painted with a color (column 6, lines 9-27).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. U.S. Patent No. 6,665,342 (hereinafter Brown) in view of Pan et al. U.S. Patent No.

6,785,329 (hereinafter Pan) and Clapper et al. U.S. Patent No. 6,925,602 (hereinafter Clapper).

Claim 19:

The claim 19 further encompasses the same scope of invention as that of the claim 17 except additional claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode.

Brown and Pan are silent to displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode. However, at column 4, lines 60-67 and column 6, lines 63-67 Brown discloses that a user enters the strobe parameters including the starting frame, the end frame, the frame sampling time interval or step size for enabling/disabling the frames wherein sampling of the frames allows the overwrite enable mode and the overwrite disable mode to be set to the frames. Thus, Brown at least suggests the claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode.

Clapper teaches the claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode to the frames (See Clapper Figs. 1-3).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to have incorporated a graphical user interface allowing the starting frame, the end frame and the frame interval to be set by a user by incorporating the graphical user interface of Clapper into Brown's system and method so that a mode setting lane indicating a frame range of Brown can be displayed on the graphical user

interface to allow the strobe parameters to be entered by the user. Brown also teaches a graphical user interface in Fig. 1 and Brown teaches a user enters the strobe parameters. It is reasonable that Brown teaching of a user's entry of the strobe parameters is through the graphical user interface in Fig. 1 and thus Brown at least teaches or suggests the claim limitation of displaying a mode setting lane which indicates a frame range of the overwrite enable mode and the overwrite disable mode to the frames. Clapper clearly teaches displaying a mode setting lane that indicates a frame range that can be used in Brown to allow the strobe parameters to be entered and the overwrite enable mode and the overwrite disable mode to be set to the frames.

One of the ordinary skill in the art would have been motivated to do so to interactively enter the strobe parameters while the thumbnail images representing the video sequence are viewed simultaneously to control the manipulation of the video sequence (See Clapper Figs. 1-3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jcw Jinhong Wang